

from the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
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**PCT**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference <b>NEMO-001PCT</b>		Date of mailing (day/month/year) <b>21 MAR 2006</b>
<b>FOR FURTHER ACTION</b> See paragraph 2 below		
International application No. <b>PCT/US05/04398</b>	International filing date (day/month/year) <b>11 February 2005 (11.02.2005)</b>	Priority date (day/month/year) <b>12 February 2004 (12.02.2004)</b>
International Patent Classification (IPC) or both national classification and IPC <b>IPC: E04H 15/20( 2006.01);F01B 19/00( 2006.01)</b> <b>USPC: 135/87,121;92/34</b>		
Applicant <b>NEMO EQUIPMENT, INC.</b>		

1. This opinion contains indications relating to the following items:

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input type="checkbox"/>            | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input checked="" type="checkbox"/> | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |
| <input checked="" type="checkbox"/> | Box No. VII  | Certain defects in the international application   |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application  |

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion <b>20 February 2006 (20.02.2006)</b>	Authorized officer <b>Tamara L. Graysay</b> Telephone No. (571) 272-3600
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INTERNATIONAL SEARCHING AUTHORITY**

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**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of:
  - ☒ the international application in the language in which it was filed
  - ☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material
    - ☐ on paper
    - ☐ in electronic form
  - c. time of filing/furnishing
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in electronic form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. IV Lack of unity of invention**

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the applicable time limit:
- ☒ paid additional fees
  - ☐ paid additional fees under protest and, where applicable, the protest fee
  - ☐ paid additional fees under protest but the applicable protest fee was not paid
  - ☐ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:

See the lack of unity section of the International Search Report (Form PCT/ISA/210)

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☒ all parts.
- ☐ the parts relating to claims Nos. \_\_\_\_\_

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Box No. V Reasoned statement under Rule 43 *bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>7,10,16,18,19 and 21-24</u>	YES
	Claims <u>1-6,8,9,11-15,17 and 20</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-24</u>	NO
Industrial applicability (IA)	Claims <u>1-24</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Please See Continuation Sheet

**Box No. VII Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

The drawings are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or content thereof:  
The sheets of drawings are not numbered in consecutive Arabic numerals (e.g., 1/3, 2/3, 3/3).

The drawings are not executed in durable black color; the lines are not uniformly thick and well-defined.

The drawings contain numbers, letters, and reference lines lacking simplicity and clarity.

The drawings contain objectionable solid black or shading.

The drawings include impermissible photocopies of photographs.

FIG. 2: reference character 13 at the bottom of the figure should be 13a. See e.g., [0028].

FIG. 4: the reference characters should be oriented to be read from the bottom or right edge of the drawing sheet.

FIG. 6b: reference character 10 should be 70 because the lead line is directed to the buckle.

FIG. 6d: reference character 76 is used to depict a pocket at the bottom of the sack; however, FIG. 6a uses reference character 66 to depict the top 66. The same reference character should be used for the same part and the orientation of the sack should be consistent as to its top and bottom.

FIG. 9: the different figures must be numbered separately; and, the height of the numbers and letters must be not less than 0.32 cm.

The description is objected to as containing the following defect(s) under PCT Rule 66.2(a)(iii) in the form or contents thereof:

[0001]: first line "tents" should be tent.

[0021]: "the" s should be deleted.

[0022]: second line, "a filled the" s should be filled.

[0029]: while acronyms (e.g., RF, UV) are acceptable, each should be spelled out at least at its first occurrence.

[0045]: sixth line, "amplifier the long pressure" should be amplify the lung pressure.

[0048]: second line "pouch 50" should be pouch 52.

[0049]: seventh line "p ouch 50" should be pouch 52.

[0055]: third line, "oral inflation valve 58" should be manual inflation valve 58 as mentioned in [0050].

[0060]: the base is associated with reference character 92 and the strap is characterized as not shown; however, the base is not shown and the strap is depicted in FIG. 5 at reference character 92 and in the upper right quadrant.

Beginning on page 19, the paragraph numbering is not consecutive, i.e., [0001] through [0005] are between [0060] and [0061]. The paragraph numbering used by applicant will be referenced herein.

[0001] on page 19: fifth line, "this" should be is.

[0005] on page 21: last three lines, "FIG 1" s should be FIG. 8; "numbe r" should be segment; and "o r" should be are.

[0061]: second and third lines, reference characters 14, 50, and 80 are not depicted in FIG. 6a.

[0062]: fifth and sixth lines, reference characters 14, 50, and 80 are not depicted in FIG. 6c.

[0064]: sixth line, "Fig. 6a" should be FIG. 6c because figure 6c depicts the sack in the rolled up position.

[0065]: reference is made to the pocket 76 at the bottom end of the sack; however, [0061] refers to the same end as the top 66. Consistency is required.

[0067]: third line, "sack 10" should be sack 62.

Claims 9, 13, 14, 21 are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or contents thereof:

Claim 9, line 2: "an" s should be deleted.

Claim 13, line 2: "and " should be an.

Claim 14, line 8: "of said of" s should be of said.

Claim 21, line 3: "output" should be outlet.

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**Box No. VIII    Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 22 and 24 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claims 22 and 24 are indefinite for the following reason(s):

Claim 22, line 2: "said bellows shaped pump" lacks antecedent basis. The claim has been interpreted as said pump is bellows shaped and" for purpose of this opinion.

Claim 24, line 2: the term "'d ump" type" is not clear as to whether the valve is a dump valve. The claim has been treated a one way quick fill valve including a dump valve having a check valve portion.

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

**V. 2. Citations and Explanations:**

Claims 1, 2, 3, 4, 12, 13 lack novelty under PCT Article 33(2) as being anticipated by MATLOCK (US-6016112).

Claim 1: MATLOCK discloses a tent structure (18, 46) and at least one pair of coupled airbeams (rib channels 22 coupled via the canopy and floor), coupled to a first portion (exterior wall 32) and adapted for retaining air (tube 24).

Claim 2: The MATLOCK structure includes canopy (18) and floor (46) portions.

Claim 3: The MATLOCK airbeams (22,24) extend from a first region of the floor portion (at the left in FIG. 1) to a second region of the floor portion (to the right in FIG. 1).

Claim 4: The MATLOCK airbeams form an arcuate shape (FIG. 1.2).

Claim 12: The MATLOCK airbeam interface (inflation nozzle 25) is disposed proximate a region (see FIG. 1) of the tent structure for filling and purging air.

Claim 13: The MATLOCK interface (inflation valve 25) is shown proximate an exterior region of the structure (FIG. 1).

Claims 1, 2, 3, 4, 5, 6, 8, 9, 11, 12, 13, 14 lack novelty under PCT Article 33(2) as being anticipated by SWETISH (US-6260306).

Claim 1: SWETISH discloses a tent structure (33, 32; col.3:5-10) and at least one pair of coupled airbeams (14, 16, 18 coupled via the segments 56a, 56b, 56c, 56d), coupled to a first portion (exterior wall segments 56a, 56b, 56c, 56d) and adapted for retaining air (tubes 14, 16, 18).

Claim 2: The SWETISH structure includes canopy portion (33) and floor portion (col.3:5-10).

Claim 3: The SWETISH airbeams (14, 16, 18) extend from a first region of the floor portion to a second region of the floor portion (42; see FIG. 1).

Claim 4: The SWETISH airbeams form an arcuate shape (FIG. 1).

Claim 5: The SWETISH airbeams have an outer surface (56a, 56b, 56c, 56d) and are coupled to one another approximate one region of their outer surface (see FIG. 2, 3).

Claim 6: The SWETISH airbeams are generally circular (FIG. 2) and have a generally circular circumference (FIG. 2, 7), wherein the first and second airbeams are joined proximate a tangent (via segments 56 and divider panel 60; FIG. 3).

Claim 8: The SWETISH airbeam include an outer skin (56a, 56b, 56c, 56d) and an inner skin (14, 16, 18).

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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

Claim 9: The SWETISH outer skin is non-air-retaining material (col.2:53-67) and the inner skin is air retaining material (col.3:1-20)

Claim 11: The SWETISH inner and outer skins are separable (FIG. 2, 3, 7).

Claim 12: The SWETISH airbeam interface (nipple 77 connected to an inflation line 24 extending through passage 78) is disposed proximate a region (see FIG. 1, 4, 7) of the tent structure for filling and purging air.

Claim 13: The SWETISH interface (nipple 77 and passage 78) is shown proximate an exterior region of the structure (FIG. 4).

Claim 14: SWETISH discloses a tent structure (33, 32; col.3:5-10) including a canopy portion (33) and floor portion (col.3:5-10); at least one pair of coupled airbeams (14, 16, 18 coupled via the segments 56a, 56b, 56c, 56d), coupled to the canopy portion (33 at exterior wall segments 56a, 56b, 56c, 56d) and extends from proximate a first region of the floor portion to a second region of the floor portion (42; see FIG. 1), each said first and second airbeams of the at least one pair of coupled airbeams adapted for containing air (inflatable tubes 14, 16, 18), and when filled with air creating an arcuate shaped semi-rigid frame member (FIG. 1) for said tent structure; and wherein said tent structure (33, 56) further includes an airbeam interface (nipple 77 and passage 78) for allowing the airbeams to be filled and purged of air (FIG. 4).

Claim 7 lacks an inventive step under PCT Article 33(3) as being obvious over SWETISH (US-6260306) as applied to claims 5, respectively, in the immediately preceding paragraph and further in view of WILBOURN (US-5226261).

Claim 7: WILBOURN teaches an inflatable arcuate shape airbeam frame having a rectangular shape (FIG. 1). The shape of the airbeam is suggested for an inflatable frame supporting a tent structure and would perform equally well as a circular cross section. A change in shape is generally recognized as being within the level of ordinary skill in the framing art, insofar as the inflatable structure will perform equally well as long as it is inflated in the manner to support the tent structure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cross section of SWETISH to be rectangular, such as suggested by the rectangular shaped airbeams of WILBOURN, since the rectangular shape would perform equally well and applicant has not provide any unexpected result in using the rectangular shape airbeam.

Claim 10 lacks an inventive step under PCT Article 33(3) as being obvious over SWETISH (US-6260306) as applied to claims 8 in the paragraph above and further in view of JACQUET (FR-2584762).

Claim 10: JACQUET teaches an inner skin (e.g., 4, 11; FIG. 3) and outer skin (1; FIG. 3) permanently coupled (1, 2; FIG. 3) and serving as an inflatable frame. JACQUET provides the inner skin as a backup to prevent deflation in case the outer skin is punctured. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the cross section of SWETISH to have an inner and outer skin permanently coupled, such as suggested by the permanently coupled inner and outer skin of JACQUET, in order to prevent deflation if the outer skin is punctured.

Claims 15, 17 lack novelty under PCT Article 33(2) as being anticipated by HASSELQUIST (US-2686006).

Claim 15: HASSELQUIST discloses a fabric pump (hollow body 10; fabric col.2:44) having an inlet (22, 19) and outlet (20, 27). The bellows takes on a generally flat shape when compressed.

Claim 17: HASSELQUIST discloses a bellows shape (FIG. 2).

Claim 16 lacks inventive step under PCT Article 33(3) as being obvious over HASSELQUIST (US-2686006) as applied to claim 15 in the immediately preceding paragraph, further in view of MIRANDO (US-3133696)

Claim 16: MIRANDO teaches an inlet (35; FIGS. 6-11) having a one way valve (38, 39, 35) and an outlet (29; FIGS. 6-11) having a one way valve (19a, 20a). The one way inlet and outlet valves in MIRANDO allow the device to be operated in a manner that positively directs the air in the inlet and out the outlet to provide a self contained pump, i.e., a pump without the person using the device having to form the check valve and to ensure air enters the pump through the inlet valve more effectively and without putting unnecessary pressure on the device being inflated. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the human assisted check valve of HASSELQUIST to be mechanical and to provide the check valve on the pump as suggested by MIRANDO, in order to provide a pump that is self contained and more effective.

Claims 18, 19 lack inventive step under PCT Article 33(3) as being obvious over HASSELQUIST (US-2686006).

Claim 18: The number of inlet or inflation valves on the pump is a matter of design choice that is within the level of ordinary skill in the art and dependent upon the desired valving arrangement and application of the pump. For example, a second inlet would permit intake of air into the pump to occur more rapidly. Therefore, it would have been obvious to one of ordinary skill in the art at the time



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**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

the invention was made to modify HASSELQUIST to include a secondary inlet or inflation valve for inflating in order to refill the pump more rapidly.

Claim 19: As for the moisture vent, the structure recited does not define over HASSELQUIST as modified.

Claims 20 lacks novelty under PCT Article 33(2) as being anticipated by HASSELQUIST (US-2686006).

Claim 20: HASSELQUIST discloses a fabric pump (hollow body 10; fabric col.2:44) having an inlet (22, 19) and outlet (20, 27). The bellows takes and generally maintains a generally flat shape when compressed.

Claims 21, 22, 23, 24 lack inventive step under PCT Article 33(3) as being obvious over HASSELQUIST (US-2686006) as applied to claim 20 in the immediately preceding paragraph, further in view of MIRANDO (US-3133696)

Claim 21: MIRANDO teaches an inlet (35; FIGS. 6-11) having a one-way valve (38, 39, 35) and an outlet (29; FIGS. 6-11) having a one way valve (19a, 20a). The one way inlet and outlet valves in MIRANDO allow the device to be operated in a manner that positively directs the air in the inlet and out the outlet to provide a self contained pump, i.e., a pump without the person using the device having to form the check valve and to ensure air enters the pump through the inlet valve more effectively and without putting unnecessary pressure on the device being inflated. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the human assisted check valve of HASSELQUIST to be mechanical and to provide the check valve on the pump as suggested by MIRANDO, in order to provide a pump that is self contained and more effective.

Claim 22: MIRANDO teaches the use of foam filling (cellular fill including shredded foam col.2:44-55). The foam filler provides assistance to the pump user by drawing air into the inlet when the compressed foam returns to its expanded state. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify HASSELQUIST to include foam filling, such as suggested by the foam filled pump of MIRANDO, in order to provide a mechanism to return the pump to an expanded state thereby assisting the pump user by drawing air into the inlet when the compressed foam returns to its expanded state.

Claim 23: The inlet valve of HASSELQUIST as modified by MIRANDO is a quick fill valve as broadly recited insofar as the inlet valve includes an opening. The limitation does not structurally define over the reference.

Claim 24: The inlet valve of HASSELQUIST as modified by MIRANDO includes a check valve insofar as the valve only allows air to enter the inlet.

Claims 1-24 meet the criteria set out in PCT Article 33(4), and thus claims 1-24 have industrial applicability because the subject matter claimed can be made or used in industry.

## NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:  
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:  
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:  
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or  
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:  
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

### "Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

**It must be in the language in which the international application is to be published.**

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

### Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

### Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.